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Date: 02/22/2010 11:17 AM
Subject: Alternative analysis flowchart

Hi Everyone;

Here is the long-awaited alternatives analysis flowchart. It prints out nicely on 11X17 paper so you don't have to go blind reviewing it.

Please give me feedback, anytime between now and up to and including our meeting on the 8th March. Probably the best way to check it is think up some scenarios and see if they will run all the way to some conclusion.

Paul and Dave, I would really appreciate your viewpoints since you now how this will affect funding of sewer upgrades. I would really be interested to see how this approach would work if somebody was planning to get certain grants but then those grants fell through.

Thank you for all your help,

Mike

START HERE
Undertake PER for community. Determine the WWTS upgrade necessary to comply with applicable standards including, if they can be met, base numeric nutrient standards (BNNS). It is only necessary to consider technologies up to DEQ's defined limits of technology. The designed facility[1]:

1. Can comply, costs ≤ 1% MHI **2.** Can comply, costs > 1% MHI **3.** Cannot comply, costs > 1% MHI **4.** Cannot comply, ≤ 1% MHI

If land application is being considered in lieu of a technological upgrade to WWTS, go directly to **LAND APPLICATION** box below

Scenario 1 follows this path

Scenarios 2, 3, 4 follow this path

1. Done. Upgrade to the WWTS is undertaken. **Temporary Nutrient Criteria not required.**

Some communities may be able to meet BNNS with higher cost (>1 % MHI). They could choose to build the facility anyway if they want; it precludes the need for temporary nutrient criteria

LAND APPLICATION. *Is land application a good option for the community (e.g., could they implement land application within a reasonable cost, probably <2.0% MHI?)*
NO **YES/MAYBE**

MILESTONE: Community must decide whether to go with this option or pursue temporary nutrient criteria (aka variance). Community may change its mind on this later, and could then pursue temporary nutrient criteria.

DONE. Community develops a storage and land application system in compliance with permit requirements. **Temporary Nutrient Criteria not required**.

Are there viable[2] nutrient trading options (point or non-point) available to the community within the watershed TMDL basin?
NO **YES**

Can nutrient trading completely offset the community's pending nutrient waste load allocation[3]?
NO **YES**

DONE. Community implements trading with point and/or non-point trading partner, and trade conditions are enforced in the MPDES permit. This option, after implementation, may or may not cost >1% MHI, but it is the community's choice and **Temporary Nutrient Criteria are not required.**

MILESTONE: Community can apply for temporary nutrient criteria. *Are the economic impacts substantial and widespread?*
NO **YES**

*What is the community's **current** user waste-water rate relative to community's current % MHI?*
≤1.0% >1.0%

Community is eligible for temporary nutrient criteria (aka variance from BNNS) based on economic hardship. Temporary nutrient criteria set equal to concentrations and load from whatever their current WWTS produces. However, just meeting non-nutrient WQ standards alone may result in user rates >> 1% MHI.

Community is eligible for temporary nutrient criteria (aka variance from BNNS) based on demonstrated economic hardship resulting from meeting the BNNS standards. Temporary nutrient criteria concentrations and load will then equate to the technology, trading offset, or combination solutions that would bring new user rates to about 1.0% MHI. Case-specific engineering considerations may make it hard to hit 1% MHI exactly, therefore the best solution may fall in the 0.95-1.5% MHI range. Must be approved by DEQ.

MILESTONE: The WWTS upgrade so far considered may not be at LOT, and may not be substantial enough to cause substantial and widespread economic impacts either. Consider a more aggressive nutrient removal upgrade (i.e., expend more $$).

Does the revised WWTS under consideration now cause substantial and widespread economic impacts?

NO **YES**

Community is eligible for temporary nutrient criteria (aka variance from BNNS) based on demonstrated economic hardship resulting from meeting the standards. Temporary nutrient criteria concentrations and load will then equate to the technology, trading offset, or combination solutions that would bring new user rates to about 1% MHI. Case-specific engineering considerations may make it hard to hit 1% MHI exactly, therefore the best solution may fall in the 0.95-1.5% MHI range. Must be approved by DEQ.

Community must upgrade WWTS to limits of technology (LOT).

Community can receive temporary nutrient criteria based on limits of technology (LOT).

Resulting nutrient concentrations and load are adopted into rule by the Department after a public hearing.

"Second Generation" Varian

ach set of facility-specific temporary
ıtrient criteria will be revisited at 5
ear intervals to see if the justification
r them is still reasonable.

the time of the re-justification, are ere reasonable[4] nutrient-removal chnologies now available to install?

O **YES**

emporary nutrient
iteria are deemed
ceptable for the next
year interval.

Community must install the appropriate technology

Will the new technology, after installation, achieve the base numeric nutrient standards?

NO **YES**

Community installs the technologies and the temporary nutrient criteria are removed from the books, since community is meeting the BNNS. **Temporary nutrient criteria no longer required.**

Is the community's WWTS currently discharging at the limits of technology?

NO **YES**

Community granted 2nd-generation temporary nutrient criteria (based on current LOT) and these are adopted as Department rules after a public hearing.

Community granted 2nd-generation temporary nutrient criteria (cost-based, using current MHI) and these are adopted as Department rules after a public hearing.

Actions falling within these large brackets will re-iterate until (a) the current (i.e., 1st or 2nd generation) set of temporary nutrient criteria sunset at 20 years, at which point DEQ will have to take a hard look and see if base numeric nutrient standards and the beneficial uses they are set to protect are really achievable in the waterbodies in question; or (B) base numeric nutrient standards have been achieved and the temporary nutrient criteria are no longer in place.

FOOTNOTES

1. Cost in each of the scenarios refers to current user rates + additional rates after upgrade divided by community's median household income.
2. "Viable" means available and cost affective.
3. Both permits and the TMDL will set the waste load allocation as the WWTS's load that will meet the base numeric nutrient standards at the end of the mixing zone (or end of pipe if no dilution is available).
4. "Reasonable" means tested, readily installed, and not extremely expensive, i.e., the technology will not result in new user rates >> 1.0% of their current MHI.